UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/253,250	02/19/1999	MICHAEL E. BASKEY	PO9-99-014	5382

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EXAMINER
TODD, GREGORY G

ART UNIT	PAPER NUMBER
2157	

DATE MAILED: 08/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _19 February 1999_ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-22_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-22_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _19 February 1999_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)	4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _5_ .	6) ☐ Other: .

DETAILED ACTION

1.   This is a first office action in response to application filed, with the above serial

number, on 19 February 1999 in which claims 1-22 are presented for examination.

Claims 1-22 are therefore pending in the application.

Drawings

2.   This application has been filed with informal drawings which are acceptable for

examination purposes only. Formal drawings will be required when the application is

allowed.

3.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5)

because they do not include the following reference sign(s) mentioned in the

description: 5A and 5B. A proposed drawing correction or corrected drawings are

required in reply to the Office action to avoid abandonment of the application. The

objection to the drawings will not be held in abeyance.

4.   The drawings are objected to because There are two sets of figures 5 & 6 (figure

pages 6 &9). A proposed drawing correction or corrected drawings are required in reply

to the Office action to avoid abandonment of the application. The objection to the

drawings will not be held in abeyance.

Specification

5.   The lengthy specification has not been checked to the extent necessary to

determine the presence of all possible minor errors. Applicant's cooperation is

requested in correcting any errors of which applicant may become aware in the

specification.

6.   The disclosure is objected to because of the following informalities: On page 6,

lines 13-16, applicant refers to Figure 1 without reference numbers, thus unclear what is

being referred to. Appropriate correction is required.

7.   The disclosure is objected to because of the following informalities:

On page 2, lines 16-21, any related and/or co-pending application must be

identified by the serial and/or patent numbers.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

9.   Claims 3 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. A "Self-Timed Interface or an STI bus" is not clearly

defined in the disclosure or the claims.

10.   Claim 7 recites the limitation "plurality of networks" in line 1. There is insufficient

antecedent basis for this limitation in the claim.

11.   Claims 9, 18 and 22 recite the limitation "said Connector" in line 1. There is

insufficient antecedent basis for this limitation in the claim.

12.   Claims 9, 18 and 22 recite the limitation "said Network Interface Elements" in line

2. There is insufficient antecedent basis for this limitation in the claim.

13.   Claims 10 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. The terminology "an I/O device adapters" could be a

single or plural sense of the meaning.

14.   Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. The claim terminology "few special functions that replace

multitudes of channel functions" is indistinct and vague.

15.   Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. The claim terminology "special functions that replace many

functions" is indistinct and vague.

16.   Claim 12 recites the limitation "computing network environment" in line 3. There

is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

17.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

18.　　Claims 1-2, 4, 6, 10-13, 14-15, 17, and 19-20 are rejected under 35

U.S.C. 102(b) as being anticipated by Caldarale et al (hereinafter "Caldarale",

5,659,794).

19.　　As per Claim 1, Caldarale discloses an apparatus for providing direct processing

access between application servers and application users wherein Caldarale discloses:

　　　　- main storage capable of establishing processing communication with an

application server (feature of Fig. 1 (24); at least col. 6, lines 21-27, 9-12);

　　　　- main storage containing a queuing mechanism for retrieval and storage of

incoming and outgoing data without causing interrupts in any running programs (feature

of Fig. 2 (59 &60)) (at least col. 8, lines 15-16, 25-27);

　　　　- an interface element capable of establishing processing communication with at

least one application user (NIOP) (feature of Fig. 1 (10 & 46 & 16));

　　　　- an interrogator (network I/O microcode) for examining multiple queues in queue

mechanism to transfer appropriate requests, responses and data between application

server(s) and application user(s) (at least col. 7, lines 44-46; col. 8, lines 11-25).

20.　　As per Claim 2.

　　　　- interface element further comprises of a connector interface element

(channel/peripheral interfaces) (at least col. 6, lines 39-41)) and a network interface

element (network interface) (features of Fig. 1 (10 26)).

21.　　As per Claim 4.

22.   As per Claim 6.

- main storage can be in processing communication with a plurality of network elements and servers (at least col. 6, lines 21-27, 9-12; Fig. 1).

23.   As per Claim 10.

- network interface element further comprises an I/O device adapter (NIOP contains...Channel/Network I/O Microcode...Channel microcode utilizes CA...multiple adapters in NIOP, network channels) (at least col. 7, lines 13-19, 40-41), at least one more processor (network interface controller) (at least col. 7, lines 42-46) and a local storage area (NIOP message buffers made up of queue banks) (at least col. 7 line 63 - col. 8 line 2).

24.   As per Claim 11.

- Network Interface Element is capable of connecting to one or more individual application users (feature of Fig. 1).

25.   As per Claim 12.

- Interface Element (NIOP) performs only a few special functions that replace multitudes of channel functions normally performed by a computing network environment (at least col. 7, lines 50-57).

26.   As per Claim 13.

- Interface Element (NIOP) performs special functions that replace many functions normally performed by control (I/O device controlling) units (buffering and queuing) (at least col. 7, lines 50-57).

27.   As per Claim 14, Caldarale discloses an apparatus for providing direct

processing access between a main storage, capable of connecting to at least one

application server and an interface element with at least one adapter capable of

establishing processing communication with at least one application user(s), and

adapter wherein Caldarale discloses:

        - data receivers set up in application server for processing data (servers implicitly

process received data) (at least col. 3, lines 20-31);

        - a plurality of queues located in main storage for providing continuous running of

programs without interruptions (feature of Fig. 2);

        - an updator for changing the status of network computing system every time

new data is received, deleted or modified (at least col. 3, lines 55-65; col. 9, lines 29-

31);

        - an interrogator for interrogating multiple existing queues in main storage

simultaneously to process any received data or requests (accept input from and send

output to existing network stored by NIOP buffers) (at least col. 9, lines 39-46);

        - a determinator for interrogation and routing of data to appropriate application

user to which data has to be forwarded to (transferring to particular network interface

based on network interface ID and address) (at least col. 17, lines 21-51).

28.   As per Claim 15.

        - interface element further comprises of a connector interface element

(channel/peripheral interfaces) (at least col. 6, lines 39-41)) and a network interface

element (network interface) (features of Fig. 1 (10 26)).

29.   As per Claim 17.

- main storage can be in processing communication with a plurality of network

elements and servers (at least col. 6, lines 21-27, 9-12; Fig. 1).

30.   As per Claim 19.

- network interface element further comprises an I/O device adapter (NIOP

contains...Channel/Network I/O Microcode...Channel microcode utilizes CA...multiple

adapters in NIOP, network channels) (at least col. 7, lines 13-19, 40-41), at least one

more processor (network interface controller) (at least col. 7, lines 42-46) and a local

storage area (NIOP message buffers made up of queue banks) (at least col. 7 line 63 -

col. 8 line 2).

31.   As per Claim 20.

- Network Interface Element is capable of connecting to one or more individual

application users (feature of Fig. 1).

Claim Rejections - 35 USC § 103

32.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

33.   Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Caldarale

in view of Carbillet (hereinafter "Carbillet", 6,256,696).

Caldarale fails to disclose using his **plurality of processors for** specifically **redundant** capabilities. However, the use and advantages for using such a protocol is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Carbillet. Carbillet discloses using a plurality of processors for the purpose of redundance in communication information processing systems (at least col. 1, lines 19-28). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of Carbillet's processor redundancy into Caldarale's multiple processors so as to protect the system from failure in the case of one processor failing for any reason, the other processor would go on to complete the information processing, especially important for critical informations systems.

34.   Claims 7 & 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caldarale in view of Brandt et al (hereinafter "Brandt", 6,081,834).

Although Caldarale suggests using a specific network protocol (at least Caldarale col. 11, lines 53-55), Caldarale fails to explicitly disclose using a TCP/IP oriented web-server. However, the use and advantages for having such a protocol implemented on the network is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Brandt (at least col. 12, lines 1-7). Brandt teaches a network provider (web server) using a TCP/IP protocol. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a TCP/IP oriented web-server on Caldarale's network because this would enhance the

expendability and compatibility of Caldarale's network since it would allow for the

incorporation of new and future networking protocol implementations for existing

network equipment and users.

35.   Claims 3 & 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Caldarale in view of Casper et al (hereinafter "Casper", 6,192,482).

        Caldarale fails to disclose the connector interface element is in processing

communication with main storage via a Self-Timed Interface or an STI bus. However,

the use and advantages for using such an interface is well known to one skilled in the

art at the time the invention was made as evidenced by the teachings of Casper (at

least abstract; col. 7, lines 30-36). Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to implement the use of a STI

bus into Caldarale's system because the STI interface would offer more compatible

interface connectivity solutions when different equipment vendors are involved, such as

a heterogeneous system environment and is additionally operated at a faster clock

speed.

36.   Claims 9, 18, 21 & 22 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Caldarale in view of Leger et al (hereinafter "Leger", 5,765,023).

37.   As per Claims 9 and 18.

        Although Caldarale suggests using an ISA interface between the interface

elements (at least col. 6, lines 32-35), Caldarale fails to disclose the connector interface

element and network interface element being in processing communication with one

another via a PCI bus. However, the use and advantages for using such an interface is

well known to one skilled in the art at the time the invention was made as evidenced by

the teachings of Leger (at least col. 3, lines 35-42). Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to

implement Leger's use of a PCI bus as opposed to Caldarale's ISA bus because a PCI

bus is a more widely-used interface and is additionally operated at a faster clock speed.

38.   As per Claim 21.

Caldarale fails to disclose the connector interface element being in processing

communication with main storage via a direct access memory I/O device. However, the

use and advantages for using DMA between memory and an interface is well known to

one skilled in the art at the time the invention was made as evidenced by the teachings

of Leger (at least Leger abstract). Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to incorporate the use of

using DMA between storage devices and I/O interfaces into Caldarale's system

because this would enhance the speed and processing power of the other processors,

by offloading this task to a DMA I/O device to move the data from one peripheral to the

main memory for faster computations.

39.   As per Claim 22.

Caldarale fails to disclose the connector interface element and network interface

element being in processing communication with one another via a direct access

memory I/O device. However, the use and advantages for using DMA between memory

of different components (such as a peripheral and NIC) within a system is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Leger (at least Leger abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of using DMA between I/O interfaces into Caldarale's system because this would enhance the speed and processing power of the other processors, by offloading this task to a DMA I/O device to move the data to/from one peripheral from/to another component such as a NIC to be transferred over a network for faster network data transmission.

Conclusion

40.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Brandt et al (6,021,430), Garcia, Bartek et al, Sharma et al, Chin et al, and Kawaguchi et al are cited for disclosing pertinent information related to the claimed invention. Applicants are requested to consider the prior art reference for relevant teachings when responding to this office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory G Todd whose telephone number is (703)305-5343. The examiner can normally be reached on Monday - Friday 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (703)305-4792. The fax phone
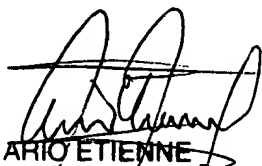
numbers for the organization where this application or proceeding is assigned are

(703)746-9153 for regular communications and (703)305-7201 for After Final

communications.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (703)305-

3900.

gt
August 26, 2002

ARIO ETIENNE
PRIMARY EXAMINER